Title: BIKINI 2013: International Workshop and Practicum on Geospatial, Real-Time Field Measurements of Gamma-Emitting Radionuclides in Soils

Date/duration: Spring-early summer 2013/ 10-14 days

Place: Bikini Island (Republic of the Marshall Islands)

Organizers: Lawrence Livermore National Laboratory in cooperation with the Bikini/Ejit/Kili Local Atoll Government and Pacific Operations International, Inc.

Sponsors: U.S. Department of Energy, Office of Health and Safety; Radiation Solutions, Inc. (Canada) (www.radiationsolutions.ca); Pacific Operations International, Inc.

Anticipated Audience: Students and/or young PhDs working in the fields of radioecology, radiological assessments or radiation detection and measurement , other researchers interested in exploring new research or educational opportunities in the field of environmental radioactivity, field sampling, and radiometric analysis

Enrollment: Limited to a maximum of 20

Keywords: Training workshop in nuclear science, real-time geospatial measurements of gamma-emitting radionuclides in soil, Bikini Atoll, nuclear weapons testing in the Marshall Islands, radiological assessments, ^{137}Cs fallout contamination

Contact: Dr. Terry Hamilton at LLNL (hamilton18@llnl.gov)

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Under the auspices of the U.S. Department of Energy's Office of Health and Safety (HSS), the Lawrence Livermore National Laboratory (LLNL) together with the Bikini/Ejit/Kili local government is arranging an International Workshop and Practicum to be held during late spring-early summer of 2013 on Bikini Island in the northern Marshall Islands.

The workshop will be presented by staff from LLNL along with invited lecturers and subject-matter experts.

The workshop will cover lecture topics related to the impacts of the Marshall Islands nuclear weapons testing program; fate and transport of aged fallout radionuclides in the environment; field radiation detection, measurement, and instrument calibration; and general concepts of external radiation dosimetry. Theory sessions in the morning will be followed by hands-on practical classes in the afternoon. Practical exercises will cover topics such as soil sampling methods and strategies, use of hand-held radiation instruments, and the deployment, use, and calibration of a mobile gamma-spectrometry system mounted on a utility vehicle.

The Fukushima Daiichi nuclear power station incident in Japan highlighted the need for deploying rapid radiological assessments tools, especially in relation to providing real-time, geospatial measurements of radioactive contamination.

A unique feature of this workshop is that all participants will contribute to a practicum to conduct a real-time radiological survey of ^{137}Cs contamination across the future housing and village area on Bikini Island, analyze the data using mapping tools, and be guided through the process of a developing a peer review scientific publication as contributing coauthors.

The practicum will feature the use of a RS-700 mobile gamma spectrometry system from Radiation Solutions, Inc. (Canada) designed for vehicle, airborne or fix location real-time search, surveillance and data recording.

The Bikini Council in partnership with LLNL scientists is also seeking expressions of interest in developing a worldwide consortium of researchers to expand interest in conducting further research at Bikini. This workshop will be the first occasion whereby students or researchers will be able to visit Bikini, meet and talk with other students and professionals, and learn firsthand about the status of current DOE directed research efforts on Bikini.

The workshop will also offer participants a truly unique personal experience. *Bikini Atoll is the first World Heritage site for the Marshall Islands.* Bikini has largely remained un-occupied for more than 3 decades – there are no shops just a few dirt roads, a coarse coral runway on nearby Eneu Island, a landing dock, bunk housing located along the lagoon, and a mess hall. Enjoy weekends exploring the atoll. Go swimming or snorkeling in Bikini lagoon. Learn how to scuba dive or catch fish using a throw net.

The more adventurist and suitably qualified persons may have opportunity to dive on sunken *nuclear* ship wrecks. Receive a guided tour of old concrete bunkers from the nuclear test era, visit the infamous Bravo test crater or observe the wonders of shark pass. For more information on Bikini Atoll – see http://www.bikiniatoll.com.

The final cost of the workshop, formal organized excursions and other recreational activities have yet to be determined (go to https://marshallislands.llnl.gov/ for any updates) but will include the cost of transportation between Majuro and Bikini, workshop resources as well as food and accommodation while on Bikini. International airfares and stopover accommodation on Majuro will need to be covered separately by the workshop participants.

Original plans to conduct this workshop during 2012 were postponed because of a possible opportunity to host the workshop in conjunction with filming for a full-scale IMAX feature entitled *FORBIDDEN PARADISE* on the history of nuclear testing program in the Marshall Islands.

Due to space and equipment constraints, the workshop is limited to 15-20 participants. We are now seeking expressions of interest in attending this workshop and practicum. Expressions of interest or further information can be obtained from Dr. Terry Hamilton (email, hamilton18@llnl.gov).

You can also reserve your place at the workshop by completing the registration form on Marshall Islands Program website, https://marshallislands.llnl.gov/.

Register your interest now.

Applications will be accepted on a first-come, first-served basis.

Note: Applicants who signed up for BIKINI2012 do not need to re-apply – you will be contacted separately.

Sponsor Profiles

*The U.S. Secretary of Energy created the **Office of Health, Safety and Security (HSS)** to integrate Department of Energy (DOE) Headquarters-level functions for health, safety, environment, and security into one unified office. HSS is focused on providing the Department with effective and consistent policy development, technical assistance, education and training, complex-wide independent oversight, and enforcement. **The DOE Office of Health and Safety** establishes worker safety and health requirements and expectations for the Department to ensure protection of workers from the hazards associated with Department operations. The Office conducts health studies to determine worker and public health effects from exposure to hazardous materials and supports international health studies and programs. International health studies include those associated with studies of the Japanese A-Bomb survivors, the Russian nuclear weapons workers at Mayak and in the community around Mayak, and in providing healthcare and environmental monitoring for communities impacted by nuclear testing in the Marshall Islands (DOE / HSS > Marshall Islands).*

***Radiation Solutions Inc. (RSI)** is a designer and manufacturer of advanced gamma ray spectrometer instrumentation for Airborne, Mobile and Handheld radiation measurements. RSI's cutting edge radiation detection technology incorporates a fully digital system design, spectral analysis and advanced data processing. RSI's research and development team offers unprecedented expertise in the industry, with over 25 years experience and extensive successful product field implementation. "At RSI it is our corporate goal to always provide the highest possible quality of product, support and service."*

***Pacific Operations, Inc. (POII)** is a small business, incorporated in the State of Hawaii. POII was organized to provide unparalleled logistics support to U.S. Government agencies in the Pacific arena, and is exceptionally well acquainted with the RMI. POII is an experienced provider of flexible, cost effective, logistical support, especially to challenging remote locations, including travel coordination, facilities maintenance, translation services, and supply chain management.*

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